HEDONIC MODELS

OF LOCATION DECISIONS

WITH APPLICATIONS

TO GEOSPATIAL MICRO-DATA

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HEDONIC EQUILIBRIUM

z vector of characteristics of a house

$f_S(z)$ density of houses with characteristics z

w household income

x, ε characteristics of the household

$P(z)$ price of a house with characteristics z

$U(w - P(z), z, x, \varepsilon)$ utility of a household obtains from living in a house of type z

$f_{w,x}(w, x)\, f_\varepsilon(\varepsilon)$ density of household characteristics

$$Economy = (f_{w,x}, f_\varepsilon, f_z, U)$$

Given $P(z)$,
household with characteristics (w, x, ε)
chooses $z = d(w, x, \varepsilon)$ that
maximize $U(w - P(z), z, x, \varepsilon)$.

$P(z)$ is determined by the equilibrium condition

$$f_z(z) = \int_{w,x} f_x(w, x)\ f_\varepsilon\left(d^{-1}(w, x, z)\right) \left|\frac{\partial d^{-1}(w, x, z)}{\partial z}\right| dw\, dz$$

Using data on $P(z)$, $f_x(w, x)$, $f_z(z)$, and chosen $z's$, we can estimate U and f_ε.

These can be used to study the impact of changing technologies, demographics, and government policies by solving for the new $P(z)$ and $z's$.

DATA:

· American Housing Survey (AHS)

· National Educational Longitudinal Survey (NELS)

· Longitudinal Business Database (LBD)

· Longitudinal Employer Household Dynamics Database (LEHD)